Curriculum Vitae

Mona Shirpour

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Education

Ph.D. in Materials Science	**Max Planck Institute for Solid State Research and University of Stuttgart, Germany** Graduated with the Highest Possible Grade "Summa Cum Laude"	2007 – 2011
M.Sc. in Materials Science and Engineering	**Sharif University of Technology, Tehran, Iran** Graduated with Honors.	2002 – 2004
B.Sc. in Materials Science and Engineering	**Iran University of Science & Technology, Tehran, Iran** Graduated with Honors.	1998 – 2002

Current Position

Postdoctoral Research Associate	**Lawrence Berkeley National Laboratory** Environmental Energy Technologies Division	2011-present

Honors / Awards

- Distinguished PhD graduate with the Highest Possible Award "SUMMA CUM LAUDE" (2011)
- Doctoral Fellowship from International Max Planck Research School for Advanced Materials/Max Planck Society, Germany (2007 and 2011)
- Outstanding graduate student award from Materials Science and Engineering Department/Sharif University of Technology, Iran (2004).
- Outstanding undergraduate student award from Materials and Metallurgical Engineering Department/Iran University of Science and Technology, Iran (2002)

Research Interests

- Electrical and chemical transport properties of solid state ion conductors.
- Defect chemistry of mixed ionic and electronic conducting materials.
- Surface / interface related electrochemical properties of thin films.
- Electrochemistry of materials for energy storage and conversion devices.

Research Experience

Lawrence Berkeley National Laboratory, USA (2011 to present)

Research Subjects:
- Synthesis, structural studies and electrochemistry of new electrode materials for lithium/sodium ion batteries.
- Design of aqueous lithium/sodium ion batteries for grid applications.
- Synchrotron measurements on battery related materials.
- Defect model of lithium-ion conducting solids

Max Planck Institute for Solid State Research Research, Stuttgart, Germany

PhD Thesis advised by Prof. Joachim Maier: Grain boundary characterization of electroceramics: Acceptor- doped $BaZrO_3$, an intermediate temperature proton conductor.
Research:
- Defect chemistry of mixed ion conductors
- Grain boundary characterization of perovskite structure ion/proton conductors.
- Interface related electrical properties of ultra- thinfilms.
- Mechanism of proton conductivity in nanocrystalline oxides.

Sharif University of Technology, Tehran, Iran

Master Thesis: Synthesis and study of a new class of red pigments based on perovskite $YAlO_3$ structure.

Side Research Subject: Fabrication of porous spinel ceramics with in-situ methods.

Iran University of Science and Technology, Tehran, Iran

Bachelor Thesis: Increasing translucency of porcelain bodies in ternary system of Silica, Leucite and Mullite.

Publications

10. **M. Shirpour**, G. Gregori, L. Houben, R. Merkle, and J. Maier, "High spatially resolved dopant profile of the ion-blocking grain boundaries in Sc-doped $BaZrO_3$", in preparation.
9. G. Gregori, **M.Shirpour**, and J. Maier, "Proton conduction in dense and porous nanocrystalline ceria thin films", submitted 2012.
8. **M. Shirpour**, R. Merkle, J. Maier, "Space charge depletion in grain boundaries of $BaZrO_3$ proton conductors", Solid State Ionics, 225 (2012) 304-307.
7. **M. Shirpour**, B. Rahmati, W. Sigle, P. A. van Aken, R. Merkle, and J. Maier, "Dopant segregation and space charge effects in proton-conducting $BaZrO_3$ perovskites", J. Phys. Chem. C 2012, 116, 2453–2461.
6. **M. Shirpour**, C.T. Lin, R. Merkle, and J. Maier, "Nonlinear electrical grain boundary properties in proton conducting Y-$BaZrO_3$ supporting the space charge depletion model", Phys. Chem. Chem. Phys., 2012, 14 (2), 730-740.
5. **M. Shirpour**, R. Merkle, and J. Maier, "Evidence for space charge effects in Y-doped $BaZrO_3$ from reduction experiments", Solid State Ionics, 216 (2012) 1-5.
4. F. Giannici, **M. Shirpour**, A.Longo, A. Martorana, R. Merkle, and J. Maier, "Long-range and short-range structure of proton-conducting Y: $BaZrO_3$", Chemistry of Materials, 2011, 23, 2994–3002.
3. **M. Shirpour**, G. Gregori, R. Merkle, and J. Maier, "On the proton conductivity in pure and gadolinium doped nanocrystalline cerium oxide", Phys. Chem. Chem. Phys., 2011, 13 (3), 937-940.
2. C.T. Koch, B. Rahmati, W. Sigle, **M. Shirpour**, R. Merkle, J. Maier, and P.A. van Aken, "Mapping grain boundary potentials in ceramics by nonlinear inline electron holography and impedance spectroscopy", MC2009. Vol. 3: Materials Science, 329-330 (2009).
1. **M. Shirpour**, M.A. Faghihi Sani, and A. Mirhabibi, "Synthesis and study of a new class of red pigments based on perovskite $YAlO_3$ structure", Ceramics International 33 (2007) 1427-1433.